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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,180	12/30/2005	Shunsuke Sunahara	CSP-116-A	8016
21828 7590 10/17/2008 CARRIER BLACKMAN AND ASSOCIATES 24101 NOVI ROAD SUITE 100 NOVI, MI 48375			EXAMINER MEHTA, MEGHA S	
			ART UNIT 1793	PAPER NUMBER
			NOTIFICATION DATE 10/17/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

cbalaw@gmail.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/537,180	<b>Applicant(s)</b> SUNAHARA ET AL.	
	<b>Examiner</b> MEGHA MEHTA	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/1/2005; 4/17/2006; 8/18/2006; 10/23/2006</u> .              | 6) <input type="checkbox"/> Other: _____                          |



## **DETAILED ACTION**

### ***Election/Restrictions***

1. The response to restriction filed September 5, 2008, for elected group I has been acknowledged.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) was submitted on 6/1/2005, 4/17/2006, 8/18/2006 and 10/23/2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 5, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,794,835 Colligan et al.

Regarding claim 5, Colligan teaches a friction stir welding process for bringing a first end face and a second end face of a metal workpiece into abutment against each other, and thereafter joining said first end face and said second end face to each other with a rotating friction stir

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welding tool, wherein when a first end having said first end face is present on a retreating side and a second end having a second end face is present on an advancing side, a workpiece plunging member having a substantially circular cross section, which is disposed on a tip end of said friction stir welding tool, is plunged with a central region thereof being displaced from a boundary line between said first end face and said second end face to said second end within a range equal to or smaller than the radius of the workpiece plunging member (column 3, lines 48-59 and figure 5C).

Regarding claim 6, Colligan teaches said workpiece plunging member is displaced from said boundary line to said second end by a distance equal to or smaller than one-half of the radius of the workpiece plunging member (figure 5C).

Regarding claim 7, Colligan teaches a workpiece having said first end face and a workpiece having said second end face are separate from each other and are made of a chief component comprising the same metal (column 3, line 66 – column 4, line 2), where both plates comprise aluminum.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,794,835 Colligan et al in view of US 2002/0020164 Cleveland et al.

Regarding claim 1, Colligan teaches a method of manufacturing a body comprising the steps of bringing end faces of a plate material, the plate material having fingers projecting from corners along a joining direction, into abutment against each other to form protrusions projecting along the joining direction with end faces of the fingers, and also to form a body, gripping said protrusions and friction stir welding abutting regions of the end faces of the plate material to join the end faces to each other, thereby forming a body having said protrusions and removing said protrusions (column 8, lines 19-27).

Colligan does not teach forming a hollow cylindrical body. Cleveland teaches a method of creating a tubular body by friction stir welding plates together (paragraph [0021]). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the tubular product of Cleveland in the process of Colligan because a wider variety of geometries of final products allows for a wider variety of applications for the products.

Regarding claim 2, Colligan in view of Cleveland teaches a hollow cylindrical body having said protrusions that is pressed from a side of an outer circumferential wall surface thereof when the abutting regions are friction stir welded (Colligan column 3, lines 48-59).

Regarding claim 3, Cleveland teaches that the abutting regions are friction stir welded while said hollow cylindrical body is inclined with respect to a horizontal direction (paragraphs [0026] and [0027]). Figure 8-1 shows an inclined hollow cylindrical body. Additionally, workpieces with varying thicknesses, as discussed in [0027], would have to be inclined with respect to a horizontal direction.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,794,835 Colligan et al in view of US 2002/0020164 Cleveland et al as applied to claim 1 above, and further in view of WO 99/33594 Lawrence.

Colligan teaches friction stir welding, and Cleveland teaches forming tubes. Neither Colligan nor Cleveland teaches forming a wheel rim. Lawrence teaches friction stir welding a wheel rim that is joined to a wheel disk to produce a vehicular wheel manufactured as said hollow cylindrical body (abstract). Lawrence does not explicitly teach the wheel disk. However, in order to be used in a vehicle, the wheel rim must have a disk. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a wheel rim of Lawrence in the process of Colligan and Cleveland because a wider variety of final products allows for a wider variety of possible applications.

8. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2,148,714 Urschel in view of US 5,794,835 Colligan et al.

Regarding claim 8, Urschel teaches a welding process for bringing a first end face and a second end face of a metal workpiece having a curved surface into abutment against each other to form abutting regions, and then welding the abutting regions to join said end faces to each other, wherein said first end face and said second end face have burrs projecting in a thickness direction of said metal workpiece, and sags projecting in a direction transverse to said thickness direction, when said abutting regions are formed, said sags of said first end face and said second end face are disposed in confronting relation to each other and positioned on an outer

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circumferential wall surface of said curved surface, and said burrs are positioned on an inner circumferential wall surface of said curved surface, and wherein the abutting regions are welded (page 1, column 2 line 58 – page 2, column 1, line 6 and figures 3 and 7). Urschel does not teach friction stir welding. Colligan teaches a method of joining workpieces by friction stir welding where a plunging member of a friction stir welding tool is plunged into the outer wall surface and thereafter said friction stir welding tool is moved to scan said abutting regions (column 3, lines 48-59). It would have been obvious to include the friction stir welding of Colligan in the process of Urschel at the time of the invention because friction stir welding creates a strong, good quality weld.

Regarding claim 9, Urschel teaches said first end face and said second end face are present on the same metal workpiece, and said abutting regions are provided by curving said metal workpiece to bring said first end face and said second end face into abutment against each other (figure 7).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGHA MEHTA whose telephone number is (571)270-3598. The examiner can normally be reached on Monday to Friday 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Megha Mehta/  
Examiner, Art Unit 1793

/Kevin P. Kerns/  
Primary Examiner, Art Unit 1793